



FULBRIGHT & JAWORSKI L.L.P.

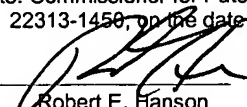
A REGISTERED LIMITED LIABILITY PARTNERSHIP
600 CONGRESS AVENUE, SUITE 2400
AUSTIN, TEXAS 78701-3271
WWW.FULBRIGHT.COM

RHANSON@FULBRIGHT.COM
DIRECT DIAL: (512) 536-3085

TELEPHONE: (512) 474-5201
FACSIMILE: (512) 536-4598

ITWAF/1600

May 10, 2004

CERTIFICATE OF MAILING 37 C.F.R. 1.8	
I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date below:	
May 10, 2004	
Date	Robert E. Hanson

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Re: *SN 10/000,311 "INBRED CORN LINE LH321" – William D. Griffith*
Our Ref. HFSC:010US; Client Ref. 51635

Commissioner:

Enclosed for filing in the above-referenced patent application is:

1. A Reply Brief on Appeal (original and 2 copies); and
2. A return postcard to acknowledge receipt of these materials. Please date stamp and mail this postcard.

Should any additional fees under 37 C.F.R. §§ 1.16 to 1.21 be required for any reason relating to the enclosed materials, the Commissioner is authorized to deduct said fees from Fulbright & Jaworski L.L.P. Account No.: 50-1212/HFSC:010US.

Respectfully submitted,



Robert E. Hanson
Reg. No. 42,628

REH/vv
Enclosures

25412990.1 / 10208311



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
William D. Griffith

Serial No. 10/000,311

Filed: December 4, 2001

Title: INBRED CORN LINE LH321

Group Art Unit: 1638

Examiner: Fox, D.

Atty. Dkt. No.: HFSC:010US

CERTIFICATE OF MAILING
37 C.F.R. §1.8

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date below:

May 10, 2004
Date


Robert E. Hanson

REPLY BRIEF

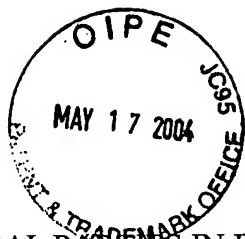


TABLE OF CONTENTS

	Page
I. REAL PARTIES IN INTEREST	2
II. RELATED APPEALS AND INTERFERENCES	2
III. STATUS OF THE CLAIMS	2
IV. STATUS OF AMENDMENTS	2
V. SUMMARY OF THE INVENTION	3
VI. ISSUES ON APPEAL	3
VII. GROUPING OF THE CLAIMS	3
VIII. SUMMARY OF THE ARGUMENT	4
IX. REPLY	5
A. The Indefiniteness Rejections Are Not Premised on a Correct Reading of the Claims	5
B. The Written Description Rejections Are Improper	6
1. The Rejections Are Legally Incorrect	6
2. The method claim rejections have not been adequately supported	8
C. Rejection of Claims Under 35 U.S.C. §112, First Paragraph - Enablement	11
X. CONCLUSION	12
APPENDIX 1: Appealed Claims	
APPENDIX 2: Pending Claims	



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
William D. Griffith

Serial No. 10/000,311

Filed: December 4, 2001

Title: INBRED CORN LINE LH321

Group Art Unit: 1638

Examiner: Fox, D.

Atty. Dkt. No.: HFSC:010US
(formerly N1806-072)

REPLY BRIEF

Mail Stop Appeal Brief-Patents

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Appellants hereby submit an original and two copies of this Reply Brief in response to the Examiner's Answer, dated March 9, 2004. It is believed that no additional fees are due; however, should any other fees be due the Commissioner is authorized to withdraw the appropriate fees from Fulbright & Jaworski Deposit Account No. 50-1212/HFSC:010US.

Please date stamp and return the enclosed postcard to evidence receipt of this document.

I. REAL PARTIES IN INTEREST

The real party in interest is Monsanto Company, the parent company of wholly-owned subsidiary Holden's Foundation Seed, Inc., the assignee of this application.

II. RELATED APPEALS AND INTERFERENCES

Appeals have been filed in U.S. Patent Application Ser. No. 09/606,808; U.S. Patent Application Ser. No. 09/771,938; U.S. Patent Application Ser. No. 09/772,520; U.S. Patent Application Ser. No. 09/788,334; U.S. Patent Application Ser. No. 10/077,589 and U.S. Patent Application Ser. No. 10/077,591 on behalf of a different wholly owned subsidiary of the Real Party in Interest. These cases also concern inbred corn plants. Although the cases are not related to this case and many of the claims are different, some of the same issues are raised on appeal and therefore these appeals may have a bearing on the Board's decision in this case.

III. STATUS OF THE CLAIMS

Claims 1-32 were filed with the application. Claims 20, 22-23, 25, 29 and 32 were cancelled in the Amendment and Response filed April 14, 2003. Claims 1-19, 21, 24, 26-28, and 30-31 were therefore pending at the time of the final Office Action. Claims 1-5, 7, and 9-11 were allowed in the final Office Action and claims 6, 8, 12-19, 21, 24, 26-28, and 30-31 were rejected. The final rejection of claims 6, 12-19, 21, 24, 26-28, and 30-31 is the subject of the instant Appeal. A copy of the appealed claims is attached as Appendix 1. A copy of the pending claims is attached as Appendix 2.

IV. STATUS OF AMENDMENTS

No amendments were made subsequent to the final Office Action.

V. SUMMARY OF THE INVENTION

The invention relates to the novel inbred corn line designated LH321 and seeds or populations of seed thereof. Specification at page 6, paragraph 0023. The invention also relates to plants of LH321 comprising a gene conferring male sterility. Specification at page 7, paragraph 0026. The invention further relates to plants of LH321 comprising one or more transgenes. Specification at page 28, paragraphs 0130-0131. The invention still further relates to methods comprising breeding LH321 with other corn plants, and hybrid plants produced thereby. Specification page 13, paragraph 0061.

VI. ISSUES ON APPEAL

(1) Were claims 6, 12-19, 21, 24, 26-28 and 30-31 properly rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to convey that the Appellants were in possession of the claimed invention?

(2) Were claims 6, 12-19, 21, 24, 26-28 and 30-31 properly rejected under 35 U.S.C. §112, first paragraph, as not being enabled?

(3) Were claims 6 and 26-28 properly rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out the subject matter which Appellants regard as the invention?

VII. GROUPING OF THE CLAIMS

The claims stand or fall separately. The claims are directed to methods and compositions covering differing subject matter with progressively narrower scope. Distinct issues are therefore presented under the written description and enablement requirements.

VIII. SUMMARY OF THE ARGUMENT

The indefiniteness rejections fail because the rejected claims are in proper dependent form. The claims incorporate all limitations of the claim from which they depend and add a further element. The claims are therefore fully definite.

The written description rejections fail because the claimed subject matter has been fully described. Each of the claimed hybrid plants and seeds having inbred corn plant LH321 as one parent have as half of their genome the same genetic contribution from LH321, given that corn plant LH321 is inbred. This structural characteristic is readily detectable and thus defines the claimed plants. These plants can be produced using any second plant, thus written description with regard to the second parent is satisfied based on the countless corn varieties known to those of skill in the art, including the more than 300 corn varieties for which utility patents have previously been issued. Methods of crossing the claimed corn variety have been fully described in the recited steps, and such corn breeding steps were well known in the art. LH321 comprising transgenes were also fully described, in that well more than a representative collection of transgenes are described in the specification and were well known to those of skill in the art. The transgenes themselves are further not being claimed, rather it is corn plant LH321 comprising any given transgene that is claimed.

The enablement rejections fail because Appellants working examples and descriptions in the specification fully enable the claimed subject matter. The Examiner has improperly disregarded this evidence and failed to support the rejections in contradiction to the standards of the APA.

IX. REPLY

The Examiner's Answer contains a substantial reiteration of the arguments previously presented and briefed. Appellants have only responded where further clarification is necessary in view of the Examiner's Answer.

A. The Indefiniteness Rejections Are Not Premised on a Correct Reading of the Claims

Appellants submit that the indefiniteness rejections are improper because they have not been applied based on a correct reading of the claims. The Examiner's Answer indicates that the rejections have been maintained because claims 6 and 26 allegedly do not include all limitations of the claims from which they depend and therefore broaden these claims. Specifically, it is stated that claim 6 is directed to a male sterile plant whereas claim 2 is directed to a male fertile plant; and that claim 26 is directed to a plant that comprises one or more transgenes whereas claim 2 is directed to a plant comprising a given set of characteristics.

Claim 6 reads as follows:

6. (Amended) The corn plant of claim 2, wherein said plant is further defined as comprising a gene conferring male sterility.

Claim 2 reads as follows:

2. A corn plant, or parts thereof, produced by growing the seed of claim 1.

As can be seen, claim 6 *adds* to the plant of claim 2 the element of a gene conferring male sterility. While the addition of the gene renders the plant of claim 6 male sterile whereas the plant of claim 2 would otherwise be male fertile, this does not render the claim indefinite because the gene conferring male sterility is an *added* element. There is no prohibition against adding elements in a dependent claim that may modify the characteristics of the subject matter in the independent claim when lacking this element. All that is required is that a dependent claim add some element not present in the main claim while incorporating all of the limitations of the

independent claim. Here, the underlying plant in claim 6 is still the corn plant of claim 2, yet the plant comprises an added gene conferring male sterility. Were this added element removed after having been added, the starting plant of claim 2 is what would be left. Therefore, claim 6 specifies an additional element not present in the parent claim.

The same is true with respect to claim 26, which specifies that the plant of claim 2 comprises the *added element* of one or more transgenes. Once again this element is not required by claim 2 and the inclusion of the element may modify some characteristics of the plant of claim 2, but the underlying plant remains that of claim 2. As such, the claim incorporates all of the limitations of the independent claim and specifies an additional limitation. The claim is in proper dependent format and is not indefinite.

In view of the foregoing, reversal of the rejections is respectfully requested.

B. The Written Description Rejections Are Improper

1. The Rejections Are Legally Incorrect

The written description rejections are premised on the legally incorrect position that an applicant must show both a structure *and* a function for the structure in order to satisfy written description even when a structure has been provided. For example, on page 7 of the Examiner's Answer it is asserted that the fact that all of the hybrid plants produced with LH321 as one parent share a copy of the genetic complement of variety LH321 is of no consequence because "the complete genomic structure of each hybrid, and therefore the morphological and physiological characteristics expressed by each hybrid, would differ." Similarly, with regard to corn plant LH321 comprising a transgene it is stated that "[n]o guidance has been provided which correlates the structure of all transgenes with their function of conferring particular traits." This misconception is continued throughout.

The correct legal standard does not require a structure and a function when a structure has been provided that sufficiently describes the critical features of what is claimed. Rather, an applicant must merely describe the claimed subject matter by “whatever characteristics sufficiently distinguish it.” *Amgen v. Chugai Pharmaceutical*, 927 F.2d 1200, 1206 (Fed. Cir. 1991). Here, the same genetic complement of parent plant LH321 is contained in all of the claimed hybrids and describes and distinguishes the hybrid plants in full compliance with §112. This constitutes a description of concrete, distinguishable structural characteristics shared by all of the hybrid plants. This fully satisfies written description because what second parent contributes the other half of the genome is irrelevant to the production of a hybrid plant. There is only one genetic structure that is relevant here, that of corn variety LH321, which was fully described.

The hybrids are further described because one of skill in the art would immediately envision such plants. First, the entire genetic complement of corn variety LH321 was described by the proffered biological deposit with the ATCC pursuant to the *Enzo* holding. Second, the identity of the second plant is irrelevant to whether a hybrid is produced. Third, thousands of corn plants any one of which could serve as a second parent are well known to those of skill in the art, including several hundred having issued U.S. patents and biological deposits with the ATCC. Based on the seed deposits, those of skill in the art would immediately envision at least hundreds of hybrid plants down to the level of the DNA sequence of the plant genome. Given this detail of structural description, the morphological traits are completely superfluous.

The fact that this description is made at the genetic level rather than by morphological traits in no way negatives written description. Written description is satisfied by describing structure allowing those of skill in the art to immediately “visualize or recognize the identity of

the members of the genus. *The Regents of The University of California v. Eli Lilly and Co.*, 119 F.3d 1559, 1568; 43 USPQ2d 1398, 1406 (Fed. Cir. 1997). Appellants have done precisely this by disclosing the genome of corn plant LH321, a haploid copy of which is included in each of the claimed hybrid plants.

The foregoing is made clear in precisely the same MPEP quote cited in the Answer for the opposite proposition:

[t]he claimed invention as a whole may not be adequately described where an invention is ***described solely in terms of a method of its making*** coupled with its function and there is no described or art-recognized correlation or relationship between the structure of the invention and its function. A biomolecule sequence ***described only by a functional characteristic***, without any known or disclosed correlation between that function and the structure of the sequence, normally is not a sufficient identifying characteristic for written description purposes, even when accompanied by a method of obtaining the claimed sequence.

MPEP §2163 (emphasis added)

As can be seen, the foregoing section deals only with instances where the claimed subject matter is described only by a function or its method of making, ***not by structure*** defining what is claimed. Here, a structure has been provided that is shared by all of the claimed subject matter. The structure defines and distinguishes what is claimed. The remainder of structure allegedly not described is irrelevant to the ability to produce what is claimed, as any second plant can be crossed to produce the claimed hybrid plants. Appellants therefore need not demonstrate both a function and a structure for this subject matter as alleged in the Answer.

2. The method claim rejections have not been adequately supported

The Examiner's Answer cites the *University of Rochester v. G.D. Searle & Co., Inc.* Western District of New York decision and the "Revised Interim Guidelines for Examination of Patent Applications Under the 35 U.S.C. Sec. 112, ¶'Written Description' Requirement; Request

for Comments, 64 Fed. Reg. 71427, 71428 (1999), comment no. 4 as support for the rejection of method of plant breeding claims. However, neither of these support the positions taken.

With regard to the former, it is stated in the Answer that “method claims are properly subjected to a written description requirement [sic] if the starting material which requires that method is itself inadequately described.” Answer at p. 24. As an initial matter, Appellants note that it is telling that the district court and not the Federal Circuit opinion is cited as precedent. Secondly, it is noted that the statement made supports no more than that the starting materials for any given method must be adequately described. Appellants do not argue this point, as it was already shown in Appellants Brief that all of the starting materials for the claimed methods comprise either corn plant LH321 or *any* second corn plant. Rather the position actually taken by the Examiner during prosecution required that each intermediate product produced during the steps of the claimed methods be described as if claimed as a composition of matter. However, nowhere in the statement attributed to the *University of Rochester* case supports the position taken, which is directly contrary blackletter rule that written description is analyzed with respect to the *claimed invention*. *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991).

The citation to 64 Fed. Reg. 71427, 71428, comment No. 4 also fails to support the position taken. This comment states the following:

(4) Comment: Six comments were in favor of including process and product-by-process claims in the analysis, whereas one comment was opposed. One comment criticized the Guidelines for failing to acknowledge the “safe harbor” product-by-process type claim noted in *Fiers v. Revel*, 984 F.2d 1164, 25 USPQ2d 1601 (Fed. Cir. 1993), and *Amgen Inc. v. Chugai Pharmaceutical Co.*, 927 F.2d 1200, 18 USPQ2d 1016 (Fed. Cir. 1991). One comment observed that process and product-by-process claims tend not to implicate many written description issues, and it may be useful to point out possible enablement deficiencies for such claims. Two comments suggested that the Guidelines should distinguish between claims to processes whose patentability depends on the compositions used in them, as opposed to those where patentability rests in the steps of the process itself. Response: The suggestion to address process and product-by-process claims has

been adopted. Furthermore, the training materials will analyze claims wherein the patentability depends on the compositions used therein, as well as those where the patentability rests in the process steps themselves. Enablement issues raised by process and product-by-process claims are outside the scope of these Revised Interim Guidelines.

As can be seen, the comment provides no support for the position taken. The comment states no more than that the suggestion has been adopted to address process and product-by-process claims as well as claims wherein the patentability depends on the compositions as well as those where the patentability rests in the process steps themselves. Nowhere does the comment indicate that process claims are treated the same for purposes of written description as product claims as suggested in the Answer. Therefore, as no authority has been provided supporting the legal positions taken by the Examiner, it is respectfully submitted that the rejection is not supported by substantial evidence as required by the APA. *See In re Gartside*, 203 F.3d 1305, 1314-15 (Fed. Cir. 2000).

It is further noted that, as suggested in the comment above, the point of novelty must be taken into consideration when analyzing written description. The sole point of novelty here is corn plant LH321, which is acknowledged to be described. After crossing corn plant LH321 with *any* second parent plant, all of the remaining steps are routine breeding steps. The Examiner does not contest that corn breeding was routine in the art. Such plant breeding steps were also fully described in the specification. Given that the steps are routine breeding methods well known in the art and fully described in the specification, it is submitted that description cannot reasonably be claimed to be lacking. *Wang Labs., Inc. v. Toshiba Corp.*, 993 F.2d 858, 863 (Fed. Cir. 1993) (Stating that written description must be reviewed from the perspective of one of skill in the art at the time the application is filed.).

In conclusion, no basis has been provided for maintaining the rejections. All steps of the claimed process have been recited, all starting materials have been fully described, and methods

of corn breeding were well known to those of skill in the art. Reversal of the rejection is thus respectfully requested.

C. Rejection of Claims Under 35 U.S.C. §112, First Paragraph - Enablement

The Examiner continues to assert the enablement rejection based on the contention that: (1) several references from species other than corn indicate difficulty in preparing single locus conversions, and (2) all single locus traits were not known and/or the corresponding phenotypic traits were not shown.

With regard to the first point, Appellants note that none of the references have been shown to have any relevance to *corn* plants. Hunsperger deals with petunias; Kraft with sugar beets and Eshed with Tomatoes. The relevance of the references to the claimed invention has therefore not been established as is specifically required to establish a *prima facie* case of non-enablement. Appellants pointed this out in the Appeal Brief, but the Answer simply disagrees without providing a basis for doing so.

Appellants submit that the position taken is incorrect because corn breeding is extremely advanced and well known in the art as evidenced by the descriptions in the specification and references cited therein. This is due in large part to the fact that corn is one of the world's major food crops and largest seed crops. North American farmers alone plant *tens of millions of acres* of corn at the present time and there are *extensive national and international commercial corn breeding* programs. The market for corn seed in the U.S. alone is in excess of \$2 billion (e.g., http://www.biotech-info.net/Distribution_benefits.pdf). No basis has been shown to conclude that the same is true of the other plants and it is respectfully submitted that this is not true. The cited references therefore have not been shown to have any relevance to the claims.

It therefore appears that the Examiner has improperly placed the burden to show enablement on Appellants. The indication that the references concerning petunias, sugar beets and tomatoes apply to corn is made without any support. At the same time, the Examiner attempts to require Appellants to show why this is not true. While Appellants have nonetheless done so, it is respectfully noted that it is the *Office* that bears the burden of supporting its rejections. Appellants submit that this has not been done.

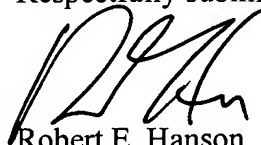
With regard to the particular transgene, Applicants have already shown over two pages well more than a representative number of genes for creation of single locus conversions. Further, the Examiner has provided no basis to indicate why the particular single locus used is relevant to production of a single locus conversion. Using the well known procedures described in detail in the specification essentially any conversion can routinely be made. Appellants therefore submit that the current rejection is unsupported in fact or law.

Appellants respectfully request that the Board reverse the rejections for the reasons set forth below.

X. CONCLUSION

It is respectfully submitted, in light of the above, none of the pending claims are properly rejected. Therefore, Appellants request that the Board reverse the pending grounds for rejection.

Respectfully submitted,



Robert E. Hanson
Reg. No. 42,628
Attorney for Appellants

FULBRIGHT & JAWORSKI L.L.P.
600 Congress Avenue, Suite 2400
Austin, Texas 78701
(512) 536-3085

Date: May 10, 2004

APPENDIX 1: APPEALED CLAIMS

6. The corn plant of claim 2, wherein said plant is further defined as comprising a gene conferring male sterility.
12. A hybrid corn seed produced by the method of claim 11.
13. A hybrid corn plant, or parts thereof, produced by growing said hybrid corn seed of claim 12.
14. A corn seed produced by growing said corn plant of claim 13 and harvesting the resultant corn seed.
15. An F₁ hybrid seed produced by crossing the inbred corn plant according to claim 2 with another, different corn plant.
16. A hybrid corn plant, or its parts, produced by growing said hybrid corn seed of claim 15.
17. A method for producing inbred LH321 seed, representative seed of which have been deposited under ATCC Accession No. _____, comprising:
 - a) planting a collection of seed comprising seed of a hybrid, one of whose parents is inbred LH321, said collection also comprising seed of said inbred;
 - b) growing plants from said collection of seed;
 - c) identifying inbred parent plants;
 - d) controlling pollination in a manner which preserves the homozygosity of said inbred parent plant; and
 - e) harvesting the resultant seed.
18. The process of claim 17 wherein step (c) further comprises identifying plants with decreased vigor.
19. A method for producing a LH321-derived corn plant, comprising:
 - a) crossing inbred corn line LH321, representative seed of said line having been deposited under ATCC accession number _____, with a second corn plant to yield progeny corn seed; and
 - b) growing said progeny corn seed, under plant growth conditions, to yield said LH321-derived corn plant.
21. The method of claim 19, further comprising:
 - c) crossing said LH321-derived corn plant with itself or another corn plant to yield additional LH321-derived progeny corn seed;

- d) growing said progeny corn seed of step (c) under plant growth conditions, to yield additional LH321-derived corn plants; and
 - e) repeating the crossing and growing steps of (c) and (d) from 0 to 7 times to generate further LH321-derived corn plants.
24. The method of claim 19, still further comprising utilizing plant tissue culture methods to derive progeny of said LH321-derived corn plant.
26. The corn plant, or parts thereof, of claim 2, wherein the plant or parts thereof have been transformed so that its genetic material contains one or more transgenes operably linked to one or more regulatory elements.
27. A method for producing a corn plant that contains in its genetic material one or more transgenes, comprising crossing the corn plant of claim 26 with either a second plant of another corn line, or a non-transformed corn plant of the line LH321, wherein progeny are produced, so that the genetic material of the progeny that result from the cross contains the transgene(s) operably linked to a regulatory element.
28. Corn plants, or parts thereof, produced by the method of claim 27.
30. A method for developing a corn plant in a corn plant breeding program using plant breeding techniques comprising employing a corn plant, or its parts, as a source of plant breeding material comprising: using the corn plant, or its parts, of claim 2 as a source of said breeding material.
31. The method for developing a corn plant in a corn plant breeding program of claim 30 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.



APPENDIX 2: PENDING CLAIMS

1. Seed of corn inbred line designated LH321, representative seed of said line having been deposited under ATCC Accession No. _____.
2. A corn plant, or parts thereof, produced by growing the seed of claim 1.
3. Pollen of the plant of claim 2.
4. An ovule of the plant of claim 2.
5. A corn plant, or parts thereof, having all of the physiological and morphological characteristics of the corn plant of claim 2.
6. The corn plant of claim 2, wherein said plant is further defined as comprising a gene conferring male sterility.
7. A tissue culture of regenerable cells from the corn plant of claim 2.
8. The tissue culture according to claim 7, the cells or protoplasts of the tissue culture having been isolated from a tissue selected from the group consisting of leaves, pollen, embryos, roots, root tips, anthers, silks, flowers, kernels, ears, cobs, husks, and stalks.
9. A corn plant regenerated from the tissue culture of claim 7, wherein the regenerated plant expresses all the morphological and physiological characteristics of inbred line LH321.
10. A corn plant with all of the physiological and morphological characteristics of corn inbred LH321, wherein said corn plant is produced by a tissue culture process using the corn plant of claim 5 as the starting material for said process.
11. A method for producing a hybrid corn seed comprising crossing a first inbred parent corn plant with a second inbred parent corn plant and harvesting the resultant hybrid corn seed, wherein said first inbred parent corn plant or second said parent corn plant is the corn plant of claim 2.
12. A hybrid corn seed produced by the method of claim 11.
13. A hybrid corn plant, or parts thereof, produced by growing said hybrid corn seed of claim 12.
14. A corn seed produced by growing said corn plant of claim 13 and harvesting the resultant corn seed.
15. An F₁ hybrid seed produced by crossing the inbred corn plant according to claim 2 with another, different corn plant.
16. A hybrid corn plant, or its parts, produced by growing said hybrid corn seed of claim 15.

17. A method for producing inbred LH321 seed, representative seed of which have been deposited under ATCC Accession No. _____, comprising:
- a) planting a collection of seed comprising seed of a hybrid, one of whose parents is inbred LH321, said collection also comprising seed of said inbred;
 - b) growing plants from said collection of seed;
 - c) identifying inbred parent plants;
 - d) controlling pollination in a manner which preserves the homozygosity of said inbred parent plant; and
 - e) harvesting the resultant seed.
18. The process of claim 17 wherein step (c) further comprises identifying plants with decreased vigor.
19. A method for producing a LH321-derived corn plant, comprising:
- a) crossing inbred corn line LH321, representative seed of said line having been deposited under ATCC accession number _____, with a second corn plant to yield progeny corn seed; and
 - b) growing said progeny corn seed, under plant growth conditions, to yield said LH321-derived corn plant.
21. The method of claim 19, further comprising:
- c) crossing said LH321-derived corn plant with itself or another corn plant to yield additional LH321-derived progeny corn seed;
 - d) growing said progeny corn seed of step (c) under plant growth conditions, to yield additional LH321-derived corn plants; and
 - e) repeating the crossing and growing steps of (c) and (d) from 0 to 7 times to generate further LH321-derived corn plants.
24. The method of claim 19, still further comprising utilizing plant tissue culture methods to derive progeny of said LH321-derived corn plant.
26. The corn plant, or parts thereof, of claim 2, wherein the plant or parts thereof have been transformed so that its genetic material contains one or more transgenes operably linked to one or more regulatory elements.
27. A method for producing a corn plant that contains in its genetic material one or more transgenes, comprising crossing the corn plant of claim 26 with either a second plant of

another corn line, or a non-transformed corn plant of the line LH321, wherein progeny are produced, so that the genetic material of the progeny that result from the cross contains the transgene(s) operably linked to a regulatory element.

28. Corn plants, or parts thereof, produced by the method of claim 27.
30. A method for developing a corn plant in a corn plant breeding program using plant breeding techniques comprising employing a corn plant, or its parts, as a source of plant breeding material comprising: using the corn plant, or its parts, of claim 2 as a source of said breeding material.
31. The method for developing a corn plant in a corn plant breeding program of claim 30 wherein plant breeding techniques are selected from the group consisting of: recurrent selection, backcrossing, pedigree breeding, restriction fragment length polymorphism enhanced selection, genetic marker enhanced selection, and transformation.